

ABSTRACT

A motor actuator (52) of a climate control system (37) includes an specialized electric motor (62) with a motor housing enclosing an encoder ring (104) on a motor shaft (77) having a plurality of opposite encoder-segment sets with encoder brushes (96a-b) on the housing wiping the encoder ring and thereby forming an encoder circuit through opposite segments of the encoder-segment sets. The electric motor further includes power and encoder terminals (98a-b and 100a-b) positioned externally of the motor housing with at least one power terminal being electrically coupled to one of the power brushes and at least one encoder terminal being electrically coupled to one of the encoder brushes. A control head (58) of the system includes a continuity pulse counter (72) coupled to the at least one encoder terminal for creating pulses representative of impedance in the encoder circuit and, therefore, movement of the motor shaft and a damper (40) linked thereto.